

## REMARKS

### Introduction

The concept of providing a riser clamp having a novel specified range for the diameter of the substantially hemicylindrical sections is at the core of the present invention. There is no teaching, suggestion or motivation in the applied references directed to this concept and the specific range recited. The rejections are based on obviousness rather than anticipation because this feature is missing from the applied references. The applied references also do not operate in a manner consistent with the novel feature. As such, there is no disclosure, suggestion or motivation for the claimed clamp and the references cannot support a *prima facie* case of obviousness. This is the essence to be gleaned from grinding through the details below.

Of the claims remaining after this amendment, the Official Action rejected claims 8, 10, 11 and 14 as obvious over Modrovich, U.S. Patent No. 4,765,106. The subject matter of cancelled claim 9 is incorporated into claim 8 by this amendment and was rejected as obvious over Modrovich in view of Rahe, U.S. Patent No. 4,733,471. Claim 12 was rejected as obvious over Modrovich in view of Evans, U.S. Patent No. 3,682,422.

### The Invention

Independent claim 8 specifically recites a substantially hemicylindrical section of each of the two bars forming the riser clamp. Uniquely, these substantially hemicylindrical sections are recited as each defining "an inside diameter smaller than the specified outside diameter by not to exceed 5% with the straight sections to either side in

juxtaposition.” The specified outside diameter is that of the pipe positively recited in claim 8.

The range presented, “smaller than the specified outside diameter by not to exceed 5%” under the condition of the attachment sections being juxtaposed, affords a wholly different use of such clamps. The feature is not a matter of design choice. As emphasized in the specification, CPVC pipes are fragile as compared with steel pipes. They also have smooth outer walls. The gripping of such pipes by standard riser clamps is highly problematic.

Comparing standard riser clamps with those of the present invention, standard riser clamps, those intended to grip a vertically extending steel pipe, are designed such that the specified outside diameter of the pipe with which the clamp is to be used is substantially larger than the hole created by the clamp. The concept is to have the opportunity to tighten down the clamp to a much greater extent about the pipe. In doing so, gaps between the two bars are maintained such that substantial clamping can be achieved.

With CPVC, conventional clamping would result in fracture of the pipe. To achieve the appropriate balance of clamping force without fracture of the pipe, a very specific relationship is created such that the straight sections of the bars come together to prevent further tightening. Thus, the compression of the CPVC pipe cannot exceed that which is imposed by the 5% smaller inner diameter. Consequently, the range of relative diameter is novel and the operation specifically providing a certain degree of compression without allowing excessive compression is novel.

The range from smaller than the specified outside diameter to not to exceed 5% of the specified outside diameter provides a specific range where clamping is achieved to prevent vertical slippage of the riser pipe and yet specifically avoids fracture no matter how hard the fasteners are tightened.

### Obviousness Rejections

Looking first to Modrovich, the Official Action acknowledges a failure to teach the novel relationship:

Modrovich is silent about whether the inside diameter of the hemicylindrical sections of the two bars is smaller than the outside diameter by not to exceed five percent with the first straight section juxtaposed with the second straight sections, respectively.

Upon a careful review of Modrovich it is also true that there is no expressed intention that the device support a vertically oriented riser. Rather, a horizontal system is designed where the employed clamps provide for free movement of the enclosed pipe.

Reference is made to Modrovich column 1, lines 48 *et seq.*:

To this end, the conduit preferably encloses the pipe, but is adapted to enable the pipe to freely slide into a conduit preferably of circular cross-section.

Where retention is desired in the Modrovich patent, set screws are illustrated.

### The Standard

The U.S. PTO has established the standard for a *prima facie* case of obviousness in MPEP §2142, which states in relevant part:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a

reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In *re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEF § 2143 § 2143.03 for decisions pertinent to each of these criteria.

### **Application of the Standard**

The first and third criteria for a *prima facie* case of obviousness against all of the claims of the application are not supported by Modrovich. There is no teaching or suggestion to create the specific range of diameters afforded by the present claims. The teachings of Modrovich in fact contradict such a feature by providing for clearance rather than interference, as quoted above. The valuable purpose for constraining the range and limiting the ability to tighten the clamp about a riser is described above. Modrovich does not address that advantage and, therefore, does not provide motivation for the claimed diametrical range either. The first criteria for a *prima facie* case of obviousness is not supported by Modrovich.

There is also no teaching or suggestion of the specific range of diametrical relationship, as is acknowledged in the Official Action itself. The Official Action further fails to assert any teaching or suggestion of the use of such a limited range and the prevention of further tightening. The third criteria for a *prima facie* case of obviousness is also lacking from the reference.

### **Conclusion**

All of claims 8, 10, 11, 12 and 14 include the diametrical range for the inside of the hemicylindrical sections of the clamp bars. This range is expressed in terms of

specified riser diameter. None of the asserted references deal with that range, suggest that range or are motivated to create a mechanism requiring that range. This relationship provides for an appropriate locking of fragile pipe without fracture and without the capability for the installer to excessively compress the clamp. Consequently, Modrovich and the other applied references are unable to support a *prima facie* case of obviousness.

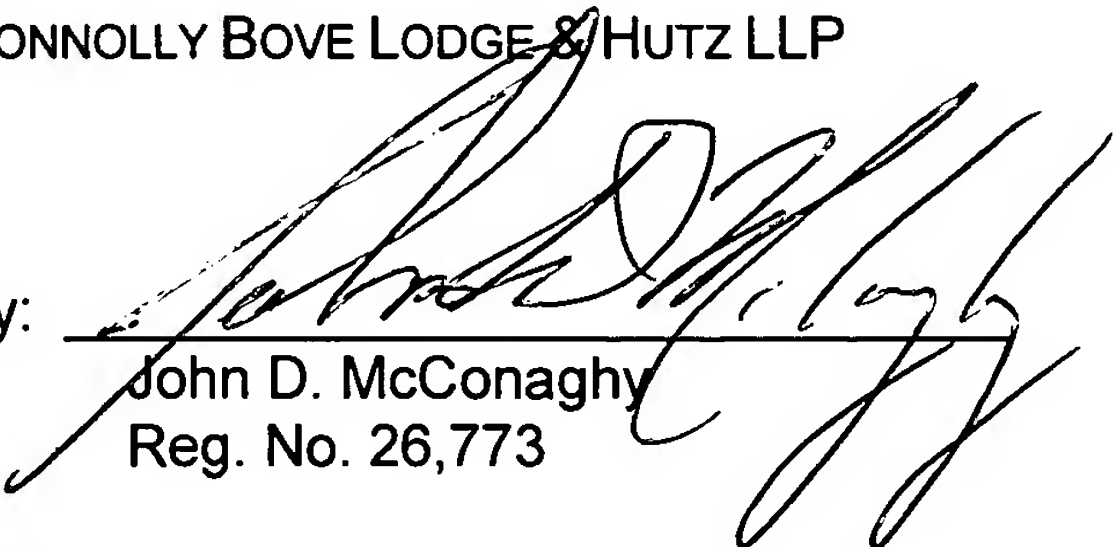
In view of the foregoing, it is believed that the claims contain unobviousness subject matter and the application is in condition for allowance. Therefore, a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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DATE: August 7, 2006

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